There are four problems on this quiz. **Don't forget the one on the back!**
Show all work clearly and in order, and circle your final answers.

1) Solve the equation \(3(x - 4) + 3 = 5(x - 1)\)

\[
\begin{align*}
3x - 12 + 3 &= 5x - 5 \\
3x - 9 &= 5x - 5 \\
-4 &= 2x \\
x &= -2
\end{align*}
\]

2) Solve the equation \(\frac{2}{3}x + \frac{1}{6} = \frac{3}{2}\)

\[
\begin{align*}
2 \cdot \frac{2}{3}x + \frac{1}{3} &= \frac{3}{2} \\
\left(\frac{4}{6}x + \frac{1}{6}\right) &= \left(\frac{3}{6}\right) \\
4x + 1 &= 9
\end{align*}
\]

\(4x = 8\)  
\(x = 2\)

3) A rectangular garden has 100 feet of fencing. If the width must be 40 feet, find the length of the rectangular garden.

\[
\begin{align*}
P &= 2w + 2L \\
P &= 2(40) + 2L \\
P &= 80 + 2L \\
100 &= 80 + 2L \\
20 &= 2L \\
L &= 10 \text{ ft.}
\end{align*}
\]
4) In a triangle, the second angle is 10 degrees more than double the first angle and the third angle is 10 degrees less than triple the first angle.

(2 pts) a) Use the above information to complete the following list of unknowns

<table>
<thead>
<tr>
<th>List of Unknowns</th>
</tr>
</thead>
<tbody>
<tr>
<td>First Angle = x</td>
</tr>
<tr>
<td>Second Angle = ( 2x + 10 )</td>
</tr>
<tr>
<td>Third Angle = ( 3x - 10 )</td>
</tr>
</tbody>
</table>

(1 pt) b) What geometric formula or fact do you need to use to create an equation?

The three angles of a triangle add up to 180°.

(3 pts) c) Use your formula and list of unknowns to write an equation, and use that equation to find the measure of all three angles in the triangle.

First Angle + Second Angle + Third angle = 180
\[(x) + (2x + 10) + (3x - 10) = 180\]
\[6x = 180\]
\[x = 30\]

First angle = \( x = 30° \)
Second angle = \( 2x + 10 = 70° \)
Third angle = \( 3x - 10 = 80° \)

The three angles of the triangle are 30°, 70°, 80°.